

**Notice of Allowability**

Application No.

10/639,059

Applicant(s)

THERIAULT, P. CHRIS

Examiner

Matthew D. Matzek

Art Unit

1771

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 9/14/2005.
2. ☒ The allowed claim(s) is/are 1-22 and 29.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>8/12/03</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                              | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Tom Finn on 11/22/2005.

The application has been amended as follows:

Claim 1 now reads: A mirror comprising: a fiber reinforced substrate including first fibers arranged in a coarse structural pattern; an optical quality surface on the substrate; a reflective optical coating on the optical quality surface; and a fiber reinforced layer between the substrate and the optical quality surface, said fiber reinforced layer including submicron diameter second fibers arranged in a fine structure that diffuses print through the coarse structural pattern from the substrate to the optical quality surface.

Claim 2 now reads: The mirror of claim 1, wherein the first and second fibers have substantially the same coefficient of thermal expansion (CTE).

Claim 5 now reads: The mirror of claim 1, wherein the fiber reinforced layer's submicron diameter second fibers comprise fibrils having a diameter less than 1 micron and a length at least one hundred times the diameter, randomly arranged within the layer.

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Claim 6 now reads: The mirror of claim 5, wherein the fibrils have a diameter less than 0.3 microns.

Claim 8 now reads: The mirror of claim 1, wherein the fiber reinforced layer comprises a weave of continuous second fibers.

Claim 15 now reads: The mirror of claim 13, wherein the fibers in the second layer are arranged in randomly arranged fibrils, a weave or a mat.

Claim 18 now reads: The mirror of claim 17 wherein the matrix is a carbon, ceramic, metal or polymer material and the fibers in the cloth and the fibrils comprise the same material selected from graphite, silicon-carbide, Boron-carbide, Boron-nitride, or boron.

Claim 19 now reads: The mirror of claim 18, wherein said fibrils have a diameter less than 0.3 microns.

Claim 22 now reads: The mirror of claim 21, wherein the graphite fibrils have a diameter less than 0.3 microns.

Claims 23-28 have been canceled as they were previously withdrawn from examination without traverse.

The following is an examiner's statement of reasons for allowance: the prior art fails to teach a mirror that comprises a fiber-reinforced substrate; an optical quality surface on the substrate; a reflective optical coating on the optical quality surface; and a nanofiber reinforced layer between the substrate and the optical quality surface.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is (571) 272-2423. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mdm

*MDM*

  
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